

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P546834

Luminaire Tested: **FMR-24-4-LD4-2LO-40-UNV-93-87-EDD**

Issue Date: 6/15/2021

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



**Test Information**

Test Method: LM-79-08  
Report Number: P546834  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 6/15/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-24-4-LD4-2LO-40-UNV-93-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

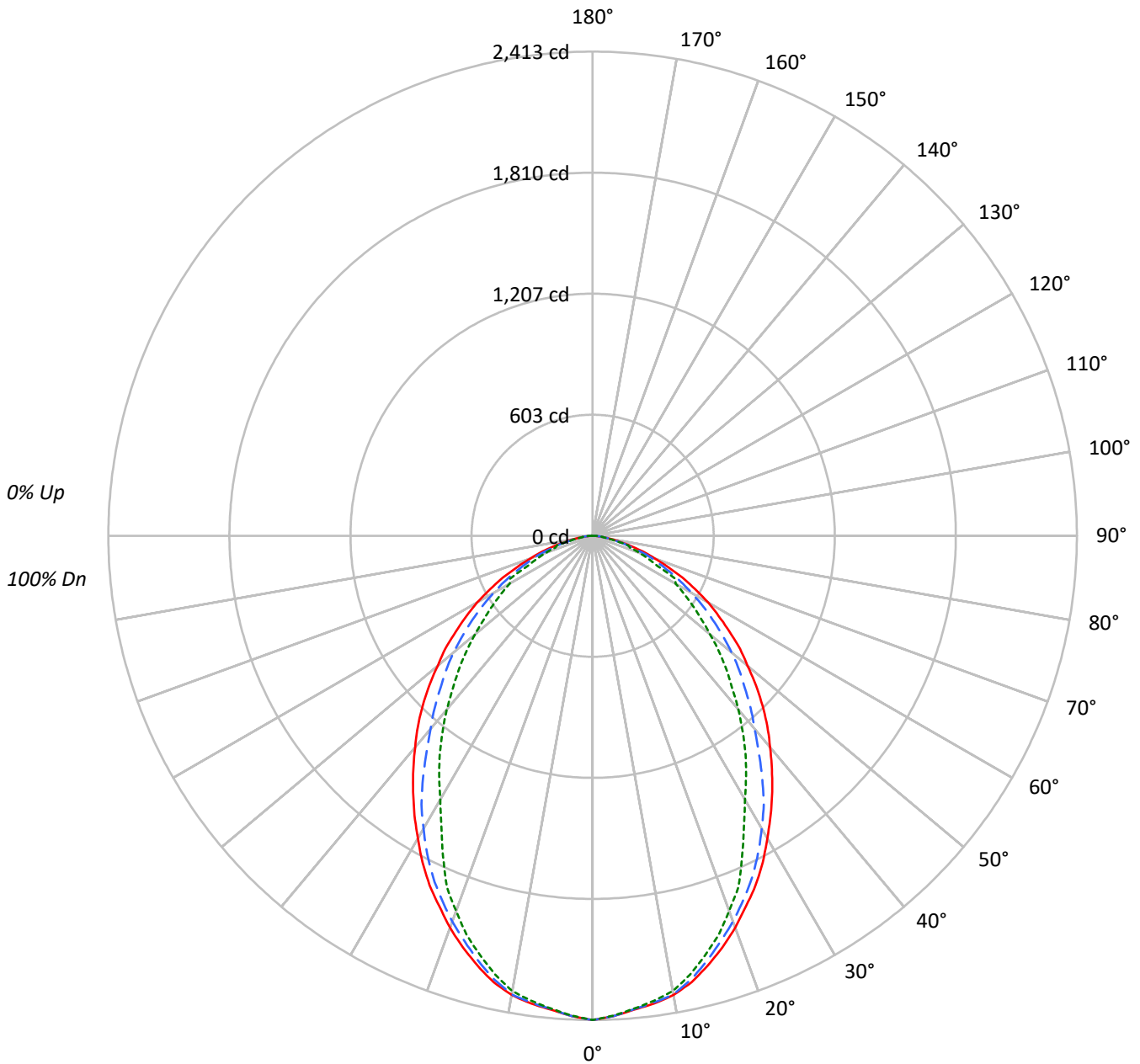
Lumens per Lamp: N/A  
Luminaire Lumens: 4737.0 lumens  
Efficiency: N/A  
Efficacy: 101.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT

TEST NUMBER: P546834

CATALOG NUMBER: FMR-24-4-LD4-2LO-40-UNV-93-87-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546834

CATALOG NUMBER: FMR-24-4-LD4-2LO-40-UNV-93-87-EDD

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3247	3247	3247
5°	3202	3199	3195
10°	3175	3171	3148
15°	3089	3058	3015
20°	2976	2928	2848
25°	2853	2791	2617
30°	2704	2618	2358
35°	2561	2419	2181
40°	2416	2205	1984
45°	2277	2038	1794
50°	2108	1892	1600
55°	1950	1715	1433
60°	1787	1531	1284
65°	1572	1341	1137
70°	1295	1174	966
75°	1030	899	943
80°	692	649	605
85°	431	517	604



TEST NUMBER: P546834

CATALOG NUMBER: FMR-24-4-LD4-2LO-40-UNV-93-87-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	224.6	4.7
10°-20°	616.4	13.0
20°-30°	853.4	18.0
30°-40°	910.0	19.2
40°-50°	830.2	17.5
50°-60°	650.4	13.7
60°-70°	423.9	8.9
70°-80°	187.8	4.0
80°-90°	40.3	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1694.5	35.8
0°-40°	2604.5	55.0
0°-60°	4085.0	86.2
0°-90°	4737.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4737.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2413	2413	2413	2413	2413	
5°	2371	2368	2368	2366	2366	225
15°	2218	2218	2195	2173	2165	623
25°	1922	1911	1880	1813	1763	882
35°	1559	1548	1473	1361	1328	975
45°	1197	1172	1071	982	943	922
55°	831	806	731	644	611	746
65°	494	466	421	430	357	487
75°	198	184	173	165	181	212
85°	28	31	34	36	39	39
90°	0	0	0	0	0	



TEST NUMBER: P546834

CATALOG NUMBER: FMR-24-4-LD4-2LO-40-UNV-93-87-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2413.0	2413.0	2413.0	2413.0	2413.0
2.5°	2396.2	2396.2	2396.2	2393.4	2393.4
5°	2371.1	2368.3	2368.3	2365.5	2365.5
7.5°	2351.6	2348.8	2346.0	2343.2	2337.6
10°	2323.7	2323.7	2320.9	2307.0	2304.2
12.5°	2279.1	2276.3	2265.1	2245.6	2240.0
15°	2217.7	2217.7	2195.4	2173.1	2164.7
17.5°	2150.7	2148.0	2120.1	2097.7	2086.6
20°	2078.2	2072.6	2044.7	2008.5	1989.0
22.5°	1997.3	1997.3	1963.8	1916.4	1896.9
25°	1922.0	1910.8	1880.2	1813.2	1763.0
27.5°	1835.5	1818.8	1785.3	1690.5	1631.9
30°	1740.7	1732.3	1684.9	1562.2	1517.5
32.5°	1651.4	1637.5	1587.3	1458.9	1422.7
35°	1559.4	1548.2	1472.9	1361.3	1327.8
37.5°	1467.3	1453.4	1358.5	1269.2	1227.4
40°	1375.3	1358.5	1255.3	1174.4	1129.8
42.5°	1288.8	1266.5	1166.0	1079.6	1029.3
45°	1196.7	1171.6	1071.2	981.9	942.9
47.5°	1104.7	1082.3	990.3	898.2	853.6
50°	1007.0	987.5	903.8	811.8	764.3
52.5°	926.1	895.4	814.5	722.5	683.4
55°	831.3	806.2	730.9	644.4	610.9
57.5°	744.8	719.7	650.0	569.1	541.2
60°	663.9	627.6	569.1	499.3	477.0
62.5°	574.6	546.8	496.5	438.0	465.9
65°	493.8	465.9	421.2	429.6	357.1
67.5°	404.5	390.5	351.5	312.4	301.3
70°	329.2	312.4	298.5	256.6	245.5
72.5°	262.2	245.5	226.0	203.6	195.3
75°	198.1	184.1	173.0	164.6	181.3
77.5°	136.7	131.1	122.7	114.4	111.6
80°	89.3	86.5	83.7	80.9	78.1
82.5°	53.0	53.0	53.0	53.0	53.0
85°	27.9	30.7	33.5	36.3	39.1
87.5°	16.7	16.7	19.5	22.3	25.1
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By 670246072 / DESKTOP-MV3F9LC







— 0°-180°    - - 45°-225°    - - - - 90°-270°







(END OF REPORT)